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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/548,469	04/13/2000	Balam Sinharoy	AT9-99-129	7436

7590 09/25/2003
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EXAMINER

LI, AIMEE J

ART UNIT	PAPER NUMBER
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2183

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/548,469

Applicant(s)

SINHARROY ET AL.

Examiner

Aimee J Li

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2003 and 14 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 39 and 40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 39 and 40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-14 and 39-40 have been considered. Claim 39 has been amended as requested by Applicant.

Papers Submitted

2. It is hereby acknowledged that the following papers have been received and placed of record in the file: IDS as received on 02 June 2003.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-14 and 39-40 are rejected under 35 U.S.C. 102(e) as being taught by Henry et al., U.S. Patent Number 6,550,004 (herein referred to Henry).
5. Referring to claim 1, Henry has taught a method for predicting a result of a conditional branch instruction, comprising the steps of:
 - a. Determining if a specified condition register field is used to store a branch condition of the conditional branch instruction (Henry column 7, lines 36-38 and column 9, lines 31-44); and
 - b. Providing a software branch prediction of the conditional branch instruction as a function of the determination if the specified condition register field is used to store the branch condition of the conditional branch instruction (Henry Abstract,

lines 13-14; column 4, lines 49-52; column 5, lines 8-12 and 35-38; column 9, lines 31-44; and Figure 2).

6. Referring to claims 2 and 9, Henry has taught wherein the software branch prediction predicts that the conditional branch instruction will be taken if the specified condition register field is used to store the branch condition of the conditional branch instruction (Henry Abstract, lines 13-14; column 4, lines 49-52; column 5, lines 8-12 and 35-38; column 7, lines 36-38; column 9, lines 31-44; and Figure 2).

7. Referring to claims 3 and 10, Henry has taught wherein the software branch prediction predicts that the conditional branch instruction will be not taken if the specified condition register field is not used to store the branch condition of the conditional branch instruction (Henry Abstract, lines 13-14; column 4, lines 49-52; column 5, lines 8-12 and 35-38; column 7, lines 36-38; column 9, lines 31-44; and Figure 2).

8. Referring to claims 4 and 11, Henry has taught wherein the software branch prediction predicts that the conditional branch instruction will be not taken if the specified condition register field is used to store the branch condition of the conditional branch instruction (Henry Abstract, lines 13-14; column 4, lines 49-52; column 5, lines 8-12 and 35-38; column 7, lines 36-38; column 9, lines 31-44; and Figure 2).

9. Referring to claims 5 and 12, Henry has taught wherein the software branch prediction predicts that the conditional branch instruction will be taken if the specified condition register field is not used to store the branch condition of the conditional branch instruction (Henry Abstract, lines 13-14; column 4, lines 49-52; column 5, lines 8-12 and 35-38; column 7, lines 36-38; column 9, lines 31-44; and Figure 2).

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10. Referring to claims 6 and 13, Henry has taught wherein the specified condition register field is N, where N is an integer (Henry column 7, lines 36-38 and column 9, lines 31-44).

11. Referring to claims 7 and 14, Henry has taught wherein the specified condition register field is a multiple of N (Henry column 7, lines 36-38 and column 9, lines 31-44). In regards to Henry, the field is located anywhere within the condition register, as long as the particular field exists, the prediction is based on this field.

12. Referring to claim 8, Henry has taught a processor comprising:

- a. An instruction fetch unit for fetching a conditional branch instruction (Henry column 6, lines 33-50 and Figure 1);
- b. Circuitry for determining if a specified condition register field is used to store a branch condition of the conditional branch instruction (Henry column 7, lines 36-38 and column 9, lines 31-44); and
- c. Circuitry for providing a software branch prediction of the conditional branch instruction as a function of the determination if the specified condition register field is used to store the branch condition of the conditional branch instruction (Henry Abstract, lines 13-14; column 4, lines 49-52; column 5, lines 8-12 and 35-38; column 9, lines 31-44; and Figure 2).

13. Referring to claim 39, Henry has taught a data processing system for predicting whether a conditional branch instruction will be taken or not taken, the data processing system comprising the program steps of:

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- a. Determining if the conditional branch instruction is positioned at a specified address in a sequence of instructions being executed (Henry column 7, line 5-6); and
- b. Predicting whether the conditional branch instruction will be taken or not taken as a function of the position of the specified address (Henry column 7, lines 5-8).

14. Referring to claim 40, Henry has taught wherein the predicting program step will predict taken if the specified address is a multiple of specified number N (Henry column 8, lines 14-16 and 31-41 and column 7, lines 5-8).

Response to Arguments

15. On page 6, under item "I. Election/Restrictions", Applicant states that they provisionally elect group one, claims 1-14 and 39-40 with traverse. Applicant submits the restriction is improper for reasons state by Applicant's attorney, Kelly Kordzik, during a telephone conversation with the Examiner on March 6, 2003. According to the Examiner's records the election/restriction was made *without* traverse and no reasons were given for why the Restriction Requirement is improper. If the election/restriction is believed to be improper, the reasons must be given.

16. Examiner withdraws the claim objection to claim 39 in favor of the amended claim 39.

17. Applicant's arguments filed 14 July 2003 have been fully considered and they have been found persuasive. The Examiner introduces a new rejection, as seen above.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as follows. Applicant is reminded that in amending in response to a rejection of

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claims, the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objections made. Applicant must also show how the amendments avoid such references and objections. See 37 CFR § 1.111(c).

- a. Talcott et al., U.S. Patent Number 5,857,098, has taught a branch predictor relying on the branch address to determine whether the branch is taken or not taken.
- b. Puziol et al., U.S. Patent Number 5,454,117, has taught a branch predictor relying on the branch address to determine whether the branch is taken or not taken.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aimee J Li whose telephone number is (703) 305-7596. The examiner can normally be reached on M-T 7:30am-5:00pm.

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (703) 305-9712. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

21. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

September 20, 2003

Aimee J. Li
Examiner
Art Unit 2183


EDDIE CHAN
SUPERVISORY PATENT EXAMINER
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